

CHAPTER 1

INTRODUCTION

1-1. Purpose

The purpose of TM 5-814-7 is to establish Army design criteria that comply with the national goal of ground-water protection. On the Federal level, subtitle C of the Resource Conservation and Recovery Act (RCRA) of 1976 (42 United States Code [USC] 6901 et. seq.) promulgated standards for the management of hazardous wastes. Of particular interest to the design engineer in subtitle C of (RCRA) are design standards for land disposal/land treatment facilities presented in 40 Code of Federal Regulations (CFR) 264. This section of the law presents two sets of performance standards applicable to this technical manual-one for land disposal/land treatment facilities and the other for ground-water monitoring. The performance standards are directed toward (1) minimization of leachate generation in the waste management facilities and removal of leachate produced before it can enter the subsurface environment (subparts K through N), and (2) backup ground-water monitoring and response programs to remove any detected leachate from the ground water (subpart F).

1-2. Scope

The regulatory framework for these design standards is described in chapter 2 of the manual; as noted throughout this manual, where Army criteria are more stringent than other regulatory standards, the Army criteria are preeminent. Chapter 3 addresses pre-design evaluation of site conditions, the important first step the design engineer must take prior to developing design criteria for a facility. Another essential pre-design consideration, disposal and handling constraints imposed by waste composition, is addressed in chapter 4. The heart of the design manual lies in chapters 5 and 6. Chapter 5 describes landfills, impoundments, land treatment, deep well injections and waste piles with respect to waste suitability, disposal constraints, procedures and equipment; chapter 6 presents the specific engineering design elements for the five disposal options. Summarized in chapters 7 through 9 are plans and monitoring requirements for hazardous waste land disposal/land treatment facilities generally dictated by 40 CFR 264. Cost elements for lined hazardous waste facilities are described in chapter 10.